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Title of Thesis **Synthesis of *ortho*-fused heterocycles as the precursors of azaphthalocyanine dyes**

Chemical compounds containing tetrazole in recent years display an unprecedented boom. They exhibit a wide area of implementation in many areas especially in the pharmaceutical industry. The tetrazole group in these compounds acts as a bioisosteric surrogate for the functional group of carboxylic acid mainly because of close physical and chemical properties. The most important drugs containing tetrazole are used in the treatment of hypertension.

In presented work we focused on the conversion of the tetrazole cycle into a different heterocyclic compound. The tetrazole can be used to the formation of other heterocycles with different number of cycles and hetero atoms. Moreover, the newly formed cycle can be also part of *ortho*-condensed system. In this work, we delt with the reactions of 5-substituted tetrazole with 6-substituted 5-chloropyrazine-2,3-dicarbonitrile, resulting in corresponding [1,2,4]triazolo[4,3-*a*]pyrazin-5,6-dicarbonitrile.

Eight new and previously undescribed compounds were prepared. Synthetised compounds were used as a starting point for the preparation of azaphthalocyanine dyes, which are used for the photodynamic therapy. These dyes were prepared by tetramerization using aliphatic alkoxides. Due to the steric hindrance of substituent on the triazole ring only one constitutional isomer of azaphthalocyanine should be produced. However, this presumption was not confirmed.